



## UNITED STATES PATENT AND TRADEMARK OFFICE

## EXHIBIT C

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/916,929	07/26/2001	Chris A. Barton	NAI1P014/01.128.01	8771
28875	7590	01/13/2005	EXAMINER	
Zilka-Kotab, PC P.O. BOX 721120 SAN JOSE, CA 95172-1120			SCHUBERT, KEVIN R	
			ART UNIT	PAPER NUMBER
			2137	

DATE MAILED: 01/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary****Application No.**

09/916,929

**Applicant(s)**

BARTON ET AL.

**Examiner**

Kevin Schubert

**Art Unit**

2137

— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —  
**Period for Reply**

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 26 July 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/ISB/08)  
 Paper No(s)/Mail Date 09042001.
- 4) ☐ Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

Application/Control Number: 09/916,929

Page 2

Art Unit: 2137

#### DETAILED ACTION

Claims 1-37 have been considered.

#### *Claim Objections*

- 5            Claims 15 and 31 are objected to because of the following informalities: a grammatical error exists in the phrase "data is meets". Appropriate correction is required.

#### *Claim Rejections - 35 USC § 112*

- 10           The following is a quotation of the second paragraph of 35 U.S.C. 112:  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

- 15           Claims 2, 18, 34, and 35 are rejected under 35 USC 112, second paragraph.

Regarding claims 2 and 18, the phrase "favorable results" renders the claims indefinite because it is unclear what constitutes a favorable result. The examiner assumes that not detecting malicious code constitutes a favorable result. See MPEP § 2173.05(d). Appropriate correction is required.

- 20           Regarding claims 34 and 35, the phrase "unfavorable results" in part j) renders the claims indefinite because it is unclear what constitutes an unfavorable result. The examiner assumes that the detection of malicious code constitutes an unfavorable result. See MPEP § 2173.05(d). Appropriate correction is required.

25

#### *Claim Rejections - 35 USC § 102*

Application/Control Number: 09/916,929

Page 3

Art Unit: 2137

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-2,4-14,17-18,20-30, and 33 are rejected under 35 U.S.C. 102(e) as being anticipated by Makita, U.S. Patent Application Publication No. 2001/0007120.

As per claims 1,17, and 33, the applicant describes a method for scanning data comprising the following limitations:

- a) executing scanning control logic utilizing a central processing unit ([0174] and [0091]);
- b) identifying a request related to data at the central processing unit [00174];
- c) indicating the data to a scanning co-processor coupled to the central processing unit so that the data is scanned by the scanning co-processor under the control of the scanning control logic ([0174] and [0091]);
- d) waiting for results from the scanning co-processor ([0176] and [0177]);
- e) executing additional logic utilizing the central processing unit while waiting for the results from the scanning co-processor [0062];
- f) initiating an event based on the results from the scanning co-processor ([0176] and [0177]);

The applicant describes an anti-virus scanning system which seeks to solve two problems as listed in the Background of the Invention. The first is to read for malicious code and quarantine it (Page 2), and the second is to alleviate load from the processor by scanning in the subsystem because scanning by the processor "uses up a large proportion of system resources in the form of cycles in the central processing unit" (Page 2). Makita discloses an invention which meets all the limitations of the claims and meets both problems: "by providing the external storage with a virus check means to perform

Application/Control Number: 09/916,929

Page 4

Art Unit: 2137

a virus check on a file to be recorded on a recording medium, it becomes unnecessary for the host computer to perform a virus check, thus reducing a processing load imposed on the host computer" [0062].

Regarding the use of a central processing unit, the primary reference discloses an operating  
5 system control unit. The operating system control unit embodies the CPU because it is well known in the art that an operating system runs on the central processing unit. The role of the operating system control unit of the primary reference is identical to the role of the CPU as described in the applicant's invention. The operating system control unit controls the read and write requests which take place between the host computer and the remote storage ([0008] and Fig 4). According to the applicant, the central processing  
10 unit issues read and write requests between the computer and the storage (Page 5).

Regarding part a), the scanning control logic is the file management unit which controls the read and write requests from the host computer [0091]. The scanning control logic is executed through the CPU as the CPU instructs the scanning control logic on its read/write requests.

Regarding parts b) and c), data requests to read/write data originate at the OS control unit, or  
15 CPU, and are sent to the scanning control logic, or file management unit, which manages the execution of the read/write requests.

Regarding part d), the host computer waits for a result of the scanning which will be whether a virus is present.

Regarding part e), the host computer continues normally while the scanning is done. As stated in  
20 the paragraph referenced above, the processing load of the host computer is reduced by the remote virus scanning process but not the host computer is not halted.

Regarding part f), the event which is executed is halting the writing of the virus to storage and notifying the user that a virus has been discovered in the case when a virus is discovered. If a virus is not discovered, the event is writing the virus to storage.

25

As per claims 2 and 18, the applicant describes the method of claims 1 and 17, which are met by Makita (see above), with the following limitation which is also met by Makita:

Application/Control Number: 09/916,929

Page 5

Art Unit: 2137

Further comprising processing the data utilizing the central processing unit upon the receipt of favorable results from the scanning co-processor [0177];

As per claims 4 and 20, the applicant describes the method of claims 1 and 17, which are met by  
5 Makita (see above), with the following limitation which is also met by Makita:

Wherein the scanning control logic includes hardware (211 of Fig 15);

As one can see from Fig 15, the file management unit, or scanning control logic unit, is a unit segregated from such physical components as an interface (21) to connect with the host computer and memory (212). Also one should note that the file management unit contains memory to store the  
10 programs which it includes [0091].

As per claims 5 and 21, the applicant describes the method of claims 3 and 20, which are met by Makita (see above), with the following limitation which is also met by Makita:

Wherein the scanning control logic is stored on the scanning co-processor (Fig 15);

15 The applicant should note that the external storage (410 of Fig 15) is the scanning co-processor which houses the virus check (413) and the file management unit, or scanning control logic, in addition to some content formatting units.

As per claims 6 and 22, the applicant describes the method of claims 1 and 17, which are met by  
20 Makita (see above), with the following limitation which is also met by Makita:

Wherein the scanning control logic includes software [0091];

The applicant should note that the file management unit includes programs.

As per claims 7 and 23, the applicant describes the method of claims 6 and 22, which are met by  
25 Makita (see above), with the following limitation which is also met by Makita:

Wherein the scanning control logic is stored in memory [0091];

Application/Control Number: 09/916,929

Page 6

Art Unit: 2137

The applicant should note that the scanning control logic, or file management unit, includes programs.

As per claims 8 and 24, the applicant describes the method of claims 1 and 17, which are met by

5 Makita (see above), with the following limitation which is also met by Makita:

Wherein the event is initiated under the control of the scanning control logic [0176];

The applicant should note that the file management unit (scanning control logic) controls the communication between the host computer and the external storage. Since the external storage notifies the host computer when a virus is discovered, the notification is under the control of the file management  
10 unit (scanning control logic).

As per claims 9 and 25, the applicant describes the method of claims 1 and 17, which are met by

Makita (see above), with the following limitation which is also met by Makita:

Wherein the scanning co-processor performs content scanning ([0054] and [0055]);

15 The applicant should note that the primary reference includes the use of content scanning, which is used to determine a format of data and format the data to a user-selected format, and virus scanning, which is used to detect malicious data.

As per claims 10 and 26, the applicant describes the method of claims 1 and 17, which are met

20 by Makita (see above), with the following limitation which is also met by Makita:

Wherein the scanning co-processor performs virus scanning [0175];

As per claims 11 and 27, the applicant describes the method of claims 1 and 17, which are met

by Makita (see above), with the following limitation which is also met by Makita:

25 Wherein the scanning co-processor includes memory (Fig 15);

Application/Control Number: 09/916,929  
Art Unit: 2137

Page 7

The applicant should note that the external storage (scanning co-processor) includes a storage unit (22 of Fig 15) and a recording medium (4 of Fig 15). The applicant should also note that the virus check is described as a program [0062] which signifies that the virus check itself is stored in memory.

5 As per claims 12-13 and 28-29, the applicant describes the method of claims 11 and 27, which are met by Makita (see above), with the following limitation which is also met by Makita:

Wherein virus signatures are stored in memory [0062];

The applicant should note that the details of the virus check program/unit are not described in great detail. Since code is evaluated and a decision is made as to whether the code is viral, the virus  
10 check has a set of virus signatures and a set of rule sets stored in memory in order to analyze and evaluate the code and determine whether it is viral.

As per claims 14 and 30, the applicant describes the method of claims 1 and 17, which are met by Makita (see above), with the following limitation which is also met by Makita:

15 Further comprising determining whether the data meets a predetermined criteria [0175];

The applicant should note that the predetermined criteria is whether or not the code is viral.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness  
20 rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.  
25 Patentability shall not be negated by the manner in which the invention was made.

Claims 16 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Makita.



Application/Control Number: 09/916,929

Page 8

Art Unit: 2137

As per claims 16 and 32, the applicant describes the method of claims 1 and 17, which are met by Makita (see above), with the following limitation which is also met by Makita:

Further comprising queuing additional data to be scanned by the scanning co-processor while waiting for the results from the scanning co-processor [0192];

5 Makita describes all the limitations of the independent claims. Makita also describes a method for queuing data in an effective or optimized data so that data can be read/written in the most effective way. However, Makita does not disclose that the queuing method takes place while waiting for the results from the scanning co-processor. It would have been obvious to one of ordinary skill in the art at the time the invention was filed to have the optimization process take place while waiting for the results of the  
10 scanning co-processor so that the data system is as effective as possible to prevent wasted resources from being used and wasted cycles from taking place on the CPU.

Claims 3,15,19,31,34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Makita in view of Zuta, International Publication No. WO 98/45778.

15

As per claims 3 and 19, the applicant describes the method of claims 1 and 17, which are met by Makita (see above), with the following limitation which is met by Zuta:

Wherein the central processing unit is coupled to the scanning co-processor via a bus (Fig 2, Page 14);

20

Makita describes all the limitations of the independent claims. However, Makita fails to describe the use of a bus which couples the CPU and the scanning co-processor. Zuta describes a system similar to that of Makita's in which a supervisor computer (scanning co-processor) monitors the scanning done by a CPU and interrupts the CPU if a virus is detected. As exhibited in Fig 2 of Zuta, the supervisor computer connects to the CPU via a bus (17 of Fig 2).

25

It would have been obvious to one of ordinary skill in the art at the time the invention was filed to combine the ideas of Zuta with those of Makita and couple a CPU to a scanning co-processor through a bus since a bus is a means to transmit data.

Application/Control Number: 09/916,929

Art Unit: 2137

Page 9

As per claims 15 and 31, the applicant describes the method of claims 14 and 30, which are met by Makita (see above), with the following limitation which is met by Zuta:

Wherein the data is sent to the scanning co-processor if it is determined that the data is meets  
5 the predetermined criteria (Page 13-15);

Makita describes all the limitations of claims 14 and 30. However, Makita fails to describe the use of having the data meet a predetermined criteria in order to be sent. Zuta describes a system in which data is monitored by the supervisory computer (scanning co-processor). When suspicious behavior is detected, the CPU is halted and the data is sent to the supervisory computer and dealt with. It would  
10 have been obvious to one of ordinary skill in the art at the time the invention was filed to incorporate the ideas of Zuta with those of Makita because the combined system could be used to effectively manage data and have data sent for scanning only when suspicious behavior is detected and not every time data is processed.

15 As per claims 34 and 35, the applicant describes a method for scanning data which is met by Makita in view of Zuta with some limitations which have already been discussed as referenced below:

- a) executing scanning control logic utilizing a central processing unit (claim 1a);
- b) identifying a request related to data at the central processing unit (claim 1b);
- c) determining whether the data meets a predetermined criteria utilizing the central processing  
20 unit under the control of the scanning control logic (claim 14);
- d) indicating the data to a scanning co-processor coupled to the central processing unit if it is determined that the data meets the predetermined criteria (claim 15);
- e) collecting scanning information from memory on the scanning co-processor (Makita paragraph [0091]);
- 25 f) scanning the data with the scanning co-processor utilizing the scanning information under the control of the scanning control logic (claim 1c);
- g) waiting for results from the scanning co-processor (claim 1d);

Application/Control Number: 09/916,929

Page 10

Art Unit: 2137

h) executing additional logic utilizing the central processing unit while waiting for the results from the scanning co-processor (claim 1e);

i) queuing additional data to be scanned by the scanning co-processor while waiting for the results from the scanning co-processor (claim 16);

5 j) initiating a security event upon the receipt of unfavorable results from the scanning co-processor (Makita paragraph [0176]);

k) processing the data utilizing the central processing unit upon the receipt of favorable results from the scanning co-processor (claim 2);

Regarding part e), file management unit (scanning co-processor) contains a number of programs  
10 which help it manage read/write requests, formatting requests, and virus scanning requests between it and the host computer.

As per claim 36, the applicant describes the system of claim 35, which is met by Makita in view of Zuta (see above), with the following limitation which is met by Zuta:

15 Wherein the scanning information is updated via a network periodically (Page 12);

Makita in view of Zuta describes all the limitations of the independent claim. Zuta also describes a method whereby scanning information is updated by "reading from a diskette... to update the list of viruses" (Page 12). Since Makita describes a system which takes place in network type environment "in which the storage device is connected to and/or disconnected from each of a plurality of host computers"  
20 [0036], it would have been obvious to one of ordinary skill in the art at the time the invention was filed to combine the ideas of Makita with those of Zuta and have a method for updating the scanning information of viruses through the network so that the information does not get outdated and new viruses can be countered.

25 Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Makita in view of Zuta in further view of Slotznick, U.S. Patent No. 6,011,537.

Application/Control Number: 09/916,929

Page 11

Art Unit: 2137

As per claim 37, the applicant describes the system of claim 35, which is anticipated by Makita in view of Zuta (see above), with the following limitation which is anticipated by Slotznick:

Wherein the additional logic to be executed and the additional data queued to be scanned are handled utilizing multi-threading algorithms (Col 12, lines 4-18).

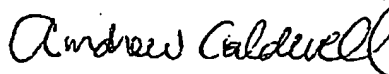
5 Makita in view of Zuta describes all the limitations of the independent claim. However, Makita in view of Zuta fails to disclose the use of multi-threading algorithms. Slotznick describes a system which incorporates the use of multi-threading algorithms for processing information in a secondary background while a main process is going on. It would have been obvious to one of ordinary skill in the art at the time the invention was filed to combine the ideas of Slotznick with those of Makita in view of Zuta and have a  
10 multi-threading background atmosphere so that processes can be executed in the CPU while the scanning is going on in another area so that normal computer execution is taking place while virus scanning is taking place without sacrificing performance.

15

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Schubert whose telephone number is (571) 272-4239. The examiner can normally be reached on M-F 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor,  
20 Andrew Caldwell can be reached on (571) 272-3868. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through  
25 Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



ANDREW CALDWELL  
SUPERVISORY PATENT EXAMINER



Form 1449 (Modified)  Information Disclosure Statement By Applicant  (Use Several Sheets if Necessary)	Atty. Docket No.	Application No.:
	NAIIP014/01.128.01	09/916,929
	Applicant:	
	Barton et al.	
	Filing Date:	Group Art Unit:
	07/26/2001	Unassigned

## U.S. Patent Documents

Examiner Initial	No.	Patent No.	Date	Patentee	Class	Sub-class	Filing Date
KS	A	6,016,553	01/18/2000	Schneider et al.	714	21	06/26/1998
	B						
	C						
	D						
	E						
	F						
	G						
	H						
	I						
	J						
	K						

## Foreign Patent or Published Foreign Patent Application

Examiner Initial	No.	Document No.	Publication Date	Country or Patent Office	Class	Sub-class	Translation
KS	L	98/45778	15.10.98	WO	G06F	11/00	Yes No
	M						
	N						
	O						
	P						

## Other Documents

Examiner Initial	No.	Author, Title, Date, Place (e.g. Journal) of Publication
	R	
	S	
	T	
Examiner	Date Considered	
Kevin Schubert	12/18/04	

Examiner: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

**Notice of References Cited**

Application/Control No.

09/916,929

Applicant(s)/Patent Under  
Reexamination  
BARTON ET AL.

Examiner

Kevin Schubert

Art Unit

2137

Page 1 of 1

**U.S. PATENT DOCUMENTS**

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-2001/0007120	07-2001	Makita, Satoshi	711/112
	B	US-5,696,822	12-1997	Nachenberg, Carey	713/200
	C	US-5,918,008	06-1999	Togawa et al.	713/200
	D	US-5,964,889	10-1999	Nachenberg, Carey S.	714/25
	E	US-5,999,723	12-1999	Nachenberg, Carey S.	703/22
	F	US-6,347,375	02-2002	Reinert et al.	713/200
	G	US-6,735,700	05-2004	Flint et al.	713/200
	H	US-6,748,534	06-2004	Gryaznov et al.	713/188
	I	US-6,763,466	07-2004	Glover, Michael	713/200
	J	US-2002/0194212	12-2002	Grupe, Robert	707/500
	K	US-2003/0191957	10-2003	HYPPONEN et al.	713/200
	L	US-6,011,537	01-2000	Slotznick, Benjamin	715/733
	M	US-			

**FOREIGN PATENT DOCUMENTS**

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

**NON-PATENT DOCUMENTS**

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

\*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)  
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

U.S. Patent and Trademark Office  
PTO-892 (Rev. 01-2001)

Notice of References Cited

Part of Paper No. 20041218